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Understanding the Paradox of Not Running: Evidence from the Business Cycle and the Entry of Third-Party Candidates in the U.S. State-Level Elections

This study offers a new explanation of why third-party and independent candidates, with a marginal probability of winning, run for U.S. state-level elections. We argue that the economic benefits of holding an office is what motivates amateur politicians to run, and predict that amateur politicians find this particularly attractive when the private sector is struggling. This is because, during a recession, amateur politicians view an elected office as a more attractive source of income than private jobs, and they pursue political power to change economic prospects by adopting new policies. Building on this argument, we hypothesize that as the unemployment rate increases, the number of third-party and independent candidates increases. Our analysis of panel data of state house, state senate, and gubernatorial elections in 48 U.S. states between 1980 and 2010 reveals that the hypothesized relationship existed only for state legislative elections. To explain why these candidates run, despite their very small probability of winning, we argue that these candidates may overestimate their probability of winning.

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ELECTORAL COMPETITION in the U.S. is dominated by two major parties, yet the electorate often finds the names of candidates from non-major parties on the ballot. Previous studies have documented the not insignificant number of third-party and independent candidates in the presidential (ROSENSTONE, BEHR, and LAZARUS 1996), U.S. House (OSTERMEIER, 2010), gubernatorial (LEM and DOWLING 2006), and state legislative elections (HAMM and HOGAN 2008; STRATMANN 2005). For example, the gubernatorial election of New Jersey in 2013 was contested by six third-party and independent candidates in addition to the two major-party candidates. In Texas, there were 51 third-party and independent candidates for the state house election in 2012, along with 86 Democratic and 116 Republican candidates. In Colorado, 30% of all candidates for the state senate election in 2012 ran as non-major party candidates.[1]

The decision of these non-major party candidates to run does not seem "rational" because of the marginal probability of winning. For example, only eleven non-major party candidates won seats in the last thirty U.S. House districts between 1956 and 2014. Thus, the probability that non-major party candidates could win a congressional seat is 0.084% during this period. Similarly, the probability that non-major party candidates could win a state house election was 0.239% in the 48 states between 1980 and 2010, according to our calculations using the data described in the subsequent section. The marginal probability of winning leaves us to wonder what accounts for their decision to run. This puzzle is almost equivalent to "the paradox of not voting," another enduring question in economics and political science asking why people vote even though the probability of changing the election outcome is trivial (FEDDERSEN 2004).

Prior research has offered several explanations of why third-party and independent candidates with the marginal probability of winning run for federal and state elections, yet those explanations do not seem adequate to address the paradox of "not running." In light of the decision calculus of political actions (DOWNS 1957),

$$pB - C \geq 0, \qquad\qquad (1)$$

some studies (BURDEN 2007; HAMM and HOGAN 2008; LEM and DOWLING 2006; STRATMANN 2005) highlight the importance of institutional settings that are likely to be correlated with the probability of winning (p) or the cost of running (C) while the benefit of holding a political office (B) holds constant. For example, less restrictive ballot access regulations

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1. This information was obtained from State Legislative Election Returns Data, 2011–2012, complied by KLARNER et al. (2013).

decrease the cost of entry, while more stringent campaign finance laws improve the electoral prospects of running against an incumbent by limiting the incumbent's ability to raise funding. The adoption of legislative and executive term limits increases the number of open elections and thus enhances the probability of winning. In short, the institutional settings are likely to change p and C, yet these findings do not necessarily mean that equation (1) is satisfied so that third-party and independent candidates decide to run. In other words, even under the institutional environments favorable to third-party and independent candidates, the probability of winning remains trivial and the cost of running is still likely to exceed pB.

To address this limitation, other studies consider the values of private consumption (D) (for example, RIKER and ORDESHOOK 1968; KAZEE 1980; MAISEL 1982). They suggest that third-party and independent candidates decide to run because

$$pB - C + D \geq 0, \qquad (2)$$

where D denotes non-electoral motivations, such as expressing their opinions to the public, seeking publicity, and affecting the behavior and policy positions of other candidates. The importance of D is exemplified by the candidacy of Ralph Nader in the 2000 U.S. presidential election where he had a very slight possibility of winning but ran for the above-mentioned non-electoral motivations. While the explanation using the D term can apply to many third-party and independent candidates, the meaning of D is quite vague and can be interpreted in any arbitrary manner. Accordingly, this approach does not seem theoretically appealing.[2]

Departing from these limitations in the existing explanations, this study seeks to offer a new explanation for "the paradox of not running." Our approach involves three stages. First, we develop a new hypothesis of why third-party and independent candidates decide to run by focusing on the role of B in (2) that has attracted little attention in the literature. We argue that the economic benefit of holding an office is what motivates amateur politicians to run for a political office for two reasons. First, some citizens may view holding an elected office as a means to receive a salary and outside income (EGGERS and HAINMUELLER 2009; DIERMEIER, KEANE, and MERLO 2005; GAGLIARDUCCI, NANNICINI, and NATICCHIONI 2010; KEANE and MERLO 2010; MADDOX 2004; MATTOZZI and MERLO 2008; QUERUBÍN and SNYDER 2009). Even when legislative salaries are low relative to the private sector, these individuals may expect that legislative careers enable them

2. Recent studies on voting have started to develop behavioral explanations by deriving D endogenously (see, for example, FEDDERSEN 2004).

to pursue additional economic returns while in office or after retirement. Therefore, they view working as an elected official a positive career option to maximize their current and future earnings. Second, some citizens who are dissatisfied with economic circumstances and the policy choices of incumbent politicians may decide to run. Holding an elected office gives them an opportunity to adopt policies that benefit them economically.

Building on these arguments, we predict that these citizens find holding an elected office particularly attractive when the private sector is struggling and economic prospects are weak. In other words, citizens are motivated to run when the relative economic benefit of holding a political office increases in comparison to the benefit of staying in the private sector. These amateur politicians choose to run as third-party or independent candidates primarily because the cost of entering as a minor-party candidate is lower than running as a major-party candidate, which typically involves more organizational and institutional complexities, such as primary elections.

To test this prediction, we use the business cycle as a measure of the relative attractiveness of the political sector to the private sector. In other words, we test the prediction that as the economy shrinks, the relative value of holding an office increases. More specifically, we hypothesize that as the unemployment rate increases, the number of third-party and independent candidates increases. This hypothesis is tested against panel data of U.S. state house, state senate, and gubernatorial elections in 48 states between 1980 and 2010. Our analysis reveals that as the state unemployment rate increases by 1%, the number of third-party and independent candidates increases by 1.6 in state house elections, and by 0.6 in state senate elections. We find no relationship between the state unemployment rate and the number of third-party and independent candidates for the gubernatorial elections. These results suggest that the decision to run as a minor-party candidate is sensitive to economic circumstances within the state.

We carefully consider whether the change in B, rather than D, C, or p in (2), accounts for our empirical findings. The business cycle may change the size of D (for example, people's desire to express their opinions to the public), or C (for example, the opportunity and any additional running costs). However, this is incompatible with the null effect of the unemployment rate on the number of gubernatorial candidates. If the changes in the sizes of D or C are related to the entry of these candidates, we should be able to find similar results for all types of election.

This null effect on the gubernatorial elections affects our interpretation of B as well. In (2), B is weighted by p, which differs in size across three

types of elections. Our data suggest that the probability of winning in a state legislative election is nonzero, while it is essentially zero in the gubernatorial elections. The different probabilities of winning, though they are marginal, may explain the null effect of the unemployment rate on the number of gubernatorial candidates because any change in B multiplied by the zero value of p in (2) generates no difference in the utility of running. In contrast, because the value of p is nonzero in the state legislative elections, the utility of running changes (slightly) as B increases. Taken together, we conclude changes in B as a result of a recession, rather than changes in C or D, are likely to account for our findings.

It also seems plausible that p increases during a recession because voters are likely to be more dissatisfied with major-party politicians who have seemingly failed to manage the economy, and therefore there is more support for minor-party candidates. However, our additional analysis shows no relationship between the state unemployment rate and the number of third-party and independent candidates who won elections. That is, p is not conditional on the state unemployment rate.

We consider the conditions under which (2) is satisfied when B increases in a recession. Third-party and independent candidates still have a tiny probability of winning in the state legislative elections, which means that the size of B must increase dramatically for the number of these candidates to increase during a recession. In other words, more people decide to run as third-party and independent candidates only if the unemployment rate increases considerably during a serious economic crisis. This interpretation is unrealistic, at best. Instead, we extend prospect theory from behavioral economics and suggest that third-party and independent candidates may incorrectly perceive their probability of winning (KAHNEMAN and TVERSKY 1979; TVERSKY and KAHNEMAN 1992). Prospect theory suggests that people tend to place too much weight on a low probability that something will occur. This implies that a recession motivates third-party and independent candidates to run because (1) the benefits of holding a political office increase in a recession; and (2) they overestimate their probability of winning.

Ultimately, this study shows that the entry decision of third-party and independent candidates is sensitive to the potential economic benefits of holding a political office. We show the possibility that the neglected part of the decision calculus also plays an essential role in explaining the behavior of amateur candidates in the U.S. Our findings are consistent with the recent economic model of a politician's career, which suggests that economic payoffs are an important predictor of the entry and exit of

politicians (DIERMEIER, KEANE, and MERLO 2005; GAGLIARDUCCI, NAN-NICINI, and NATICCHIONI 2010; KEANE and MERLO 2010).

In addition, this study is related to the citizen-candidate model (OSBORNE and SLIVINSKI 1996; BESLEY and COATE 1997). While we rely on a very simple decision calculus of political actions as in (2), OSBORNE and SLIVINSKI (1996) and BESLEY and COATE (1997) develop a more rigorous model to analyze the decisions of citizens to run for public offices. In OSBORNE and SLIVINSKI (1996), the necessary condition where symmetric k candidates run is $B/k-C \geq 0$ and $1/k = p$. This means that OSBORNE and SLIVINSKI (1996) endogenously derive (2) by implicitly assuming $D = 0$. Moreover, OSBORNE and SLIVINSKI (1996) consider the policy preference of candidates. For example, the condition where two symmetric candidates run is $B/2+(|x_i-x_j|)/2-C \geq 0$ where $|x_i-x_j|$ is a difference in policy preferences between two candidates.[3] In this study, we consider such policy preferences in B (that is, $B + |x_i-x_j|$ is the benefit from holding office) as discussed above. Therefore, our estimation model is related to the model of OSBORNE and SLIVINSKI (1996).

Finally, this study is also related to the literature on the relationship between the business cycle and mass political behavior. Prior literature on voting behavior (for example, LEWIS-BECK and STEGMAIER 2000) and the political business cycle (for example, DRAZEN 2000) suggests that people tend to vote against the incumbent government during a recession. In addition, a recent study by CHARLES and STEPHENS (2013) shows that economic downturns increase voter turnout. Our study extends this line of research by focusing on the decisions of citizens to run for public office.

The Business Cycle and the Entry of Third-Party Candidates

To test the relationship between the business cycle and the number of minor-party candidates, we develop a panel dataset of 48 U.S. states between 1980 and 2010. States and years are chosen based on data availability. Nebraska is excluded from our analysis because its legislature is unicameral and nonpartisan.

DATA AND METHOD

We tested the hypothesis using the following model:

$$[\text{Count}]_{it} = \beta_1[\text{Unemp}]_{it} + \lambda \mathbf{w}_{it} + \delta \mathbf{x}_{it} + \rho_i + \phi_t + \eta_j T + \varepsilon_{it} \qquad (3)$$

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3. OSBORNE and SLIVINSKI (1996) show one more condition where $|x_i-x_j|$ is sufficiently small and so deters entrance of the median voters.

where $[\text{Count}]_{it}$ denotes the number of third-party and independent candidates in state i in election year t; $[\text{Unemp}]_{it}$ is the annual average unemployment rate in state i in election year t; $\mathbf{w}_{it}$ and $\mathbf{x}_{it}$ include time-varying political and demographic variables respectively, which may be correlated with $[\text{Unemp}]_{it}$ and $[\text{Count}]_{it}$. In addition, ρ_i denotes a state fixed effect that captures all time-invariant characteristics of state i. Also, ϕ_t denotes a year fixed effect that captures any time-specific shocks at the national level, and $\eta_j T$ denotes a state-specific linear time trend. Finally, ε_{it} is a state-year specific error term.

The outcome variable, $[\text{Count}]_{it}$, is equal to the total number of third-party and independent candidates running for state house, state senate, or gubernatorial elections that occurred between 1980 and 2010. To count the number of candidates for the state house and senate elections, we first identify the total number of all candidates who ran in a district, and who were not affiliated with the Democratic or Republican party, by using the candidate-level database of State Legislative Election Returns, 1967–2010 (KLARNER et al. 2013).[4] Here, we include all minor party candidate labels (for example, Greens, Libertarians, Right to Life, and so on) and independent candidates. We then aggregate the number of minor-party candidates in each state by the election year. Louisiana is excluded from our dataset because we cannot obtain sufficient information to count the number of minor-party candidates from KLARNER et al. (2013). To create $[\text{Count}]_{it}$ for the gubernatorial elections, we rely on the Gubernatorial Campaign Expenditures Database, compiled by BEYLE and JENSEN (2013), which contains data of all gubernatorial candidates for general elections during the period of our study. Here, we simply calculate the total number of minor-party candidates in each gubernatorial election of 48 states.[5]

TABLE 1 shows the means of the total number of minor-party candidates for each type of election per state. The total number of observations is 736 for the state house elections, 682 for the state senate elections, and 396 for the gubernatorial elections. As discussed previously, the number of third-party and independent candidates is non-trivial in the U.S. state legislative and executive elections.

As a measure of the state business cycle, we rely on the annual unemployment rate. Here, $[\text{Unemp}]_{it}$ is equal to the civilian unemployment

4. The data are available from the ICPSR data archive at http://www.icpsr.umich.edu/index.html.

5. We excluded write-in candidates when counting the number of candidates for state house, state senate, and gubernatorial elections.

TABLE 1. The mean number of third-party and independent candidates by state.

	HOUSE	SENATE	GOVERNOR
Alabama	6.56	1.78	0.89
Alaska	9.78	3.17	3.11
Arizona	10.61	6.94	1.44
Arkansas	4.56	1.11	0.36
California	46.39	13.22	3.00
Colorado	11.22	2.50	1.78
Connecticut	23.06	7.06	1.33
Delaware	6.28	2.06	0.75
Florida	9.61	1.00	0.78
Georgia	2.11	0.28	0.78
Hawaii	3.28	1.00	1.67
Idaho	8.11	5.00	1.11
Illinois	6.28	1.28	1.56
Indiana	12.11	2.83	1.25
Iowa	5.94	1.94	2.22
Kansas	10.22	3.44	1.89
Kentucky	2.33	0.50	0.25
Maine	14.33	3.89	2.00
Maryland	5.00	0.89	0.67
Massachusetts	23.50	3.44	1.44
Michigan	29.72	11.22	1.78
Minnesota	13.17	9.55	3.89
Mississippi	15.11	7.22	1.25
Missouri	15.00	2.61	1.00
Montana	8.61	1.50	0.63
Nevada	14.72	5.06	2.11
New Hampshire	19.72	2.33	0.94
New Jersey	32.06	14.00	3.22
New Mexico	2.78	1.80	0.22
New York	75.11	34.61	4.33
North Carolina	10.22	5.11	1.38
North Dakota	1.50	1.72	0.75
Ohio	12.94	2.44	1.78
Oklahoma	2.89	0.50	1.11
Oregon	11.50	2.28	1.67
Pennsylvania	19.22	2.61	1.44
Rhode Island	11.61	7.24	1.00
South Carolina	7.94	2.78	0.89
South Dakota	3.89	1.72	0.78
Tennessee	11.61	2.39	3.67
Texas	26.50	6.00	2.11
Utah	30.50	6.33	2.33
Vermont	25.00	9.23	3.65
Virginia	16.11	6.33	0.56
Washington	10.89	1.83	0.75
West Virginia	2.61	0.67	1.13
Wisconsin	12.50	1.67	2.56
Wyoming	3.33	0.67	0.44

Note: Table entries are the mean number of third-party and independent candidates in the state house, senate, and gubernatorial elections. Data are based on 48 U.S. states between 1980 and 2010.

rate in state i in election-year t. We use the state unemployment rate in election-year t because the general elections are held in November and thus the unemployment rate in t is likely to reflect the economic situation earlier in that same year, when amateur candidates decide whether to run. To check robustness, we used the state unemployment rate in $t-1$ and obtained similar results. The data were obtained from the Bureau of Economic Statistics Local Area Unemployment Statistics.[6]

The vectors $\mathbf{x}_{it}$ denote election-specific and other institutional variables that are expected to have a direct influence on the number of minor-party candidates running for an election. When examining the count of minor-party candidates for state house and senate elections, we include the number of contested seats and open seats in election year t of state t in (1) because they should be positively associated with the outcome variables. The data are based on KLARNER et al. (2013). For the gubernatorial elections, we created an indicator variable that takes the value of one if the election is open, because of the term-limit restriction, and zero otherwise. Additionally, following BURDEN (2007) and DOWLING and LEM (2009), we include the measure of competitiveness in the previous election cycle. This measure is calculated as 100−|Democratic vote percentage−Republican vote percentage| in each district and then averaged for each election year for the state.

The institutional variables are the adoption of term limits and the measure of legislative professionalism (SQUIRE 2007). The adoption of term limits is set to one after term limits become effective in state i and zero otherwise. The data of legislative and executive term limits are obtained from the website of the National Conference of State Legislatures and LIST and STURM (2006), respectively.[7] The data for legislative professionalism are available only for 1979, 1986, 1996, and 2003. Therefore, we linearly interpolate the values for the other years. Note that the regression model for the number of gubernatorial candidates does not include the number of contested seats or the measure of legislative professionalism.

The vectors $\mathbf{x}_{it}$ include socioeconomic characteristics. They are captured by personal income per capita, the population size, the percentage of the population over 65 years old, and the percentage of the white population. Personal income per capita in constant 1982 dollars and population size are converted into the natural log. These variables all come from the Statistical Abstract of the United States. Summary statistics are presented in TABLE 2.

6. The data are available at http://www.bls.gov/lau/.
7. The website address is http://www.ncsl.org/Default.aspx?TabId=14844 (accessed 9 December 2013).

TABLE 2. Summary statistics.

	MEAN	SD	MIN.	MAX.
State house (N=736)				
N of minor-party candidates	14.305	17.504	0.000	123.000
Percent unemployed	5.961	2.098	2.300	15.600
Number of contested seats	110.284	57.289	40.000	400.000
Number of open seats	21.637	14.082	1.000	93.000
N of minor-party winners	0.239	0.851	0.000	12.000
Election closeness	0.597	0.131	0.177	0.891
Term limit adopted	0.105	0.306	0.000	1.000
Legislative professionalism	0.200	0.127	0.020	0.682
Log personal income per capita	9.616	0.198	9.060	10.172
Log population size	15.011	1.039	12.912	17.433
Percent 65 years over	12.379	2.125	2.898	18.550
Percent white population	79.603	13.931	24.744	98.493
State senate (N=682)				
N of minor-party candidates	4.401	7.116	0.000	56.000
Percent unemployed	5.947	2.091	2.300	15.600
Number of contested seats	28.267	13.823	10.000	67.000
Number of open seats	7.126	4.326	0.000	33.000
N of minor-party winners	0.047	0.303	0.000	6.000
Election closeness	0.620	0.137	0.097	0.909
Term limit adopted	0.104	0.306	0.000	1.000
Legislative professionalism	0.200	0.127	0.020	0.682
Governor (N=396)				
N of minor-party candidates	1.625	1.726	0.000	14.000
Percent unemployed	6.054	2.254	2.400	15.600
Open seat	0.250	0.434	0.000	1.000
N of minor-party winners	0.015	0.122	0.000	1.000
Election closeness	0.838	0.134	0.360	1.000
Term limit adopted	0.626	0.484	0.000	1.000

Note: Data are based on 48 U.S. states between 1980 and 2010.

All time-invariant characteristics of state i are captured by the state fixed effect, ρ_i. Time-invariant characteristics include stable institutional designs (for example, election systems) and potentially unobservable cultural norms and ideologies that could be related to the business cycle and a candidate's entry. Thus, our estimation results are not affected by state characteristics because these do not vary much over time.

Any time-specific shock is captured by the election year fixed effect, ϕ_t. This captures the effect of election years, national economic conditions, and any other major events in a particular year that might be associated with the unemployment rate and the number of minor-party candidates.

RESULTS

TABLE 3 reports the estimation results. Table entries are fixed effect regression estimates, with standard errors in parentheses. Column (1) of TABLE 3 shows the results for the state house elections, while columns (2) and (3) show the results for the state senate elections and the gubernatorial elections, respectively. The state fixed effects, election-year fixed effects, and state-specific time trends are included in the models but not shown in the table. To address the potential heterogeneity and autocorrelation within each state, standard errors are clustered by state.

Column (1) indicates that the coefficient associated with the percentage of unemployed is positive and statistically significant. The number of third-party and independent candidates increases by 1.613 in the state house elections as the state unemployment rate increases by 1%. When unemployment changes from 6 to 8%, that is, from the mean to one standard deviation above, three more candidates decide to run for the state house elections. As expected, column (1) also suggests that the number of third-party and independent candidates increases when the number of contested and open seats increase in a particular election year.

Column (2) presents similar results for the state senate elections. The number of third-party and independent candidates increases by 0.630 in the state senate elections as the state unemployment rate increases by 1%. Importantly, the effective unemployment rate for the state house elections is more than double that of the state senate elections. Note that our regression models control for the difference in the sizes of the legislature by including the number of contested seats. Thus, the different effects of the business cycle on the number of candidates are not likely to reflect the difference in the size of the legislature. We suspect that the effect is larger on the state house elections than on the senate elections because the probability of winning is slightly larger in the former than the latter.

TABLE 3. Recession and the number of third-party and independent candidates.

	(1) HOUSE	(2) SENATE	(3) GOVERNOR
Percent unemployed	1.613** (0.578)	0.630** (0.258)	0.166 (0.120)
Number of contested seats	0.130* (0.074)	0.114 (0.077)	
Number of open seats	0.151* (0.090)	0.062 (0.072)	0.023 (0.201)
Election closeness	1.558 (7.063)	−1.178 (1.791)	−0.355 (0.674)
Term limit adopted	5.387 (4.481)	0.705 (0.861)	−0.875 (0.700)
Legislative professionalism	16.947 (23.206)	−13.200 (11.760)	
Log personal income per capita	21.859 (15.036)	6.104 (5.019)	−2.855 (2.481)
Log population size	31.925 (32.419)	14.421 (10.862)	1.904 (4.706)
Percent 65 years over	−2.678 (2.711)	−0.651 (0.947)	0.211 (0.345)
Percent white population	−0.132 (0.184)	−0.033 (0.088)	0.013 (0.029)
Constant	−664.155 (513.802)	−262.881 (189.803)	−4.075 (78.144)
R^2	0.744	0.795	0.694
N	736	682	396

Note: Table entries are fixed effects regression estimates, with standard errors in parentheses. Standard errors are clustered by state. Estimates are based on data from 48 states between 1980 and 2010. The dependent variable is the total count of third-party and independent candidates in the election. State and year fixed effect, and state-specific linear time trends are included in the models. ** $p<.05$, * $p<.10$ (two-tailed tests).

The numbers of contested and open seats are estimated to have a positive influence on the number of third-party and independent candidates for the state senate elections, but their coefficients are not significant, even at the 0.10 level.

Column (3) of TABLE 3 shows that the percentage of unemployed is estimated to have a positive coefficient for the gubernatorial elections, but its size is much smaller than the coefficients from the state house and senate elections. More importantly, the coefficient is not distinguishable from zero. Thus, we conclude that the business cycle has no influence on the number of gubernatorial candidates.

In summary, our regression analysis reveals that the unemployment rate affects the number of third party and independent candidates for the state house and senate elections, but has no effect on the number of minor-party gubernatorial candidates. In addition, the effect is larger in state house elections than in senate elections.

Discussion

In this section, we interpret our findings in terms of (1). Specifically, we consider the possibility that a change in the state unemployment rate has an influence on the values of D, C, and p, rather than B, resulting in the larger number of third-party and independent candidates for the state house and senate elections. If this is true, mechanisms other than ours are likely to account for the observed relationship. In addition, we challenge the fundamental problem of the decision calculus by extending prospect theory from behavioral economics. In other words, we examine why third-party and independent candidates run despite their marginal probability of winning. Ultimately, we offer a new perspective that explains why weak candidates emerge in the context of the decision calculus.

NON-ELECTORAL PURPOSES AND THE COST OF RUNNING

One of the conventional explanations for weak candidates entering an election is that they have non-electoral motivations (RIKER and ORDESHOOK 1968; KAZEE 1980; MAISEL 1982). In other words, D is large enough so that the left-hand side of (1) becomes non-negative. Even if a candidate has no chance of winning, this candidate may find some benefits from running because they can express their opinions to the public and attract more attention. With this interpretation, D may increase during a recession because people tend to be dissatisfied with the economic policies of incumbent politicians. Thus, they are motivated to run to show their dissatisfaction. However, this fails to explain why the unemployment rate has no influence on the number of third-party and independent candidates in the gubernatorial elections. The larger value of D resulting from a recession should equally affect state legislative and gubernatorial elections, particularly because running for a gubernatorial election is more likely to attract public attention than it would in a state legislative election. In short, the null effect of the unemployment rate on the number of gubernatorial candidates allows us to reject the possibility that a change in D accounts for our findings.[8]

Similarly, our findings indicate that the cost of running is unlikely to account for the observed relationship. It is plausible that the opportunity cost

8. Some studies derive D endogenously. For example, candidates with a marginal probability of winning decide to run in order to decrease the probability that an undesirable candidate wins (OSBORNE and SLIVINSKI 1996) or to change the policy position of the opponent (ASAKO 2015). However, these hypotheses do not explain why a recession should increase the number of third-party and independent candidates.

of running decreases during a recession, because recessions tend to encourage people to retire from their jobs, or increase the amount of spare time they have to work on a campaign.[9] Nevertheless, for the same reasons discussed previously, the opportunity cost cannot explain the variation in our empirical findings across the three types of elections. If recessions decrease the opportunity cost, and this is the only explanation, the number of third-party and independent candidates for gubernatorial elections should increase.

THE PROBABILITY OF WINNING

Next, we consider the possibility that the business cycle affects the probability of winning, p. When voters experience an economic crisis, they may show their frustration by choosing a non-major party candidate. Alternatively, major-party candidates have more difficulty raising campaign funds during a recession, which affects the entry decisions and campaign activities of third-party and independent candidates and major-party challengers (BOX-STEFFENSMEIER 1996).

We empirically examine the relationship between the business cycle and the probability of winning by extending (3). Specifically, we replace the outcome variable in (3) with the number of third-party and independent candidates who won a contest in each type of election. The right-hand side of (3) includes the number of third-party and independent candidates, as well as all of the control variables used previously. TABLE 4 reveals that there is no relationship between the state unemployment rate and the number of third-party winners. Thus, it is unlikely that a recession increases the number of third-party candidates because of an increased probability of winning.

BENEFITS OF HOLDING A POLITICAL OFFICE

Drawing on the above arguments, we contend that the business cycle changes the size of B in (2), which in turn affects the entry decision of third-party candidates. We argue that a recession increases the size of B for two reasons. First, economic downturns increase the attractiveness of holding a political office relative to staying in the private sector because the average level of wages in the private sector tends to decrease during a recession, while legislative salaries and extra payoffs from political jobs remain about the same. Even when legislative salaries are low relative to the private sector, amateur politicians may expect a legislative career to enable them to gain a positive reputation that helps to maximize future

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9. AGUIAR, HURST, and KARABARBOUNIS (2013) found that people engage in civic and political activities more frequently during recessions.

TABLE 4. Recession and the number of third-party and independent winners.

	(1) HOUSE	(2) SENATE	(3) GOVERNOR
Percent unemployed	−0.008 (0.019)	0.009 (0.009)	0.002 (0.012)
Number of third-party candidates	0.018 (0.015)	0.013 (0.010)	(0.009)
Number of contested seats	0.011 (0.007)	0.003 (0.005)	
Number of open seats	−0.009* (0.005)	−0.003 (0.004)	0.013
Election closeness	0.804 (0.527)	0.122 (0.137)	0.040
Term limit adopted	0.085 (0.123)	0.024 (0.094)	−0.058 (0.054)
Legislative professionalism	−0.432 (0.913)	0.326 (0.663)	
Log personal income per capita	−0.643 (0.862)	−0.407 (0.334)	0.001 (0.372)
Log population size	−0.946 (1.594)	−0.071 (0.701)	−0.365 (0.595)
Percent 65 years over	−0.145 (0.132)	−0.115 (0.078)	−0.089 (0.061)
Percent white population	−0.003 (0.007)	−0.004 (0.004)	−0.000 (0.002)
R^2	0.561	0.234	0.276
N	736	682	396

Note: Table entries are fixed effects regression estimates, with standard errors in parentheses. Standard errors are clustered by state. Estimates are based on data from 48 states between 1980 and 2010. The dependent variable is the total count of third-party and independent winners in the election. State and year fixed effects and state-specific linear time trends are included in the models. ** p<.05, * p<.10 (two-tailed tests).

earnings. Second, economic downturns motivate amateur politicians who are dissatisfied with the incumbent government to pursue political power to give them an opportunity to revise economic policies. In other words, they seek to influence the policy decisions that affect a state's economic circumstances and ultimately their own economic prospects.

In both cases, the difference in the benefits of winning a seat and not holding a political office increases during a recession. To elaborate on this point, we rewrite (2) as

$$pB_W + (1 - p)B_N - C + D \geq B_N \Rightarrow$$
$$p(B_W - B_N) - C + D \geq 0 \qquad (4)$$

where B_W is the benefit from winning a seat, while B_N is the benefit from not holding an office as a result of an electoral loss or not running. During a recession, B_N decreases because the level of wages in the private sector decreases, while B_W increases because potential candidates seek legisla-

tive wages and a professional reputation as well as new economic policies that change the status quo implemented by the incumbent government. Accordingly, $B_W - B_N$ increases, resulting in a larger number of third-party and independent candidates.

Importantly, $B_W - B_N$ help us to explain why the number of third-party candidates for gubernatorial elections shows no change during a recession. TABLE 2 reports that the number of third-party winners of the gubernatorial elections is much smaller than the number of third-party winners of the state house and senate elections. That is, the probability of winning is almost zero in the gubernatorial elections, which means that the change in $B_W - B_N$ has no substantive influence on the entry decision of third-party candidates. On the other hand, the probability of winning in the state legislative elections is still low but the value is nonzero. Therefore, the change of $B_W B_N$ could affect the entry decision of third-party candidates in the state legislative elections.

Admittedly, p is still quite low in the state legislative elections. Thus, $B_W B_N$ has to increase dramatically during an economic downturn to satisfy (4). To elaborate on this point, we use a simple numerical example. Suppose that only $B_W - B_N$ is a random variable that is uniformly distributed on the range of one.[10] The values of $B_W - B_N$ change, depending on the state business cycle. Prior to the election, potential candidates can observe $B_W - B_N$. To simplify our discussion, we assume that all other variables in (4) are fixed. Note that the results discussed below hold even if this assumption is relaxed.[11]

We denote N as the number of potential third-party candidates. Then, the expected number of third-party candidates, N_R, is

$$N_R \equiv \Pr(p(B_W - B_N) - C + D \geq 0)N$$
$$= \Pr(B_W - B_N \geq (C - D)/p)N .$$

As an example, suppose $C - D = 0.3$, and $B_W - B_N$ is uniformly distributed [0, 1]. In addition, set $N = 5$, because there can be at most four third-party candidates in a single district for the state legislative elections during the period of our data. These values have no substantive meaning, but they are chosen so that the following conditions are satisfied. First, if a candidate will definitely win (that is, $p = 1$,) with a net cost of zero for running (that is, $C - D = 0$), then all potential candidates run regardless of the realized value of B_N. Second, if a candidate has a probability of winning of

10. The results hold even if we use other distribution functions.

11. In addition, these variables do not change considerably during the recession, as discussed previously.

50% (that is, $p = 0.50$), the expected number of candidates is $N_R = 2$. Even with other numerical examples, as long as they satisfy these two conditions, the results discussed below generally hold.

Suppose that $p = 0.05$, which is equal to the highest ratio of third-party winners in a single election year in our data. Since $B_W - B_N$ is uniformly distributed $[0, 1]$, $\Pr(B_W B_N \geq 0.3/0.05) = \Pr(B_W - B_N \geq 6) = 0$. Thus, the expected number of candidates is zero ($N_R = 0$). If $\Pr(B_W - B_N \geq 6) = 0.20$, the expected number of candidates increases from zero to one ($N_R = 5 \times 0.2 = 1$). For this increase to occur, $B_W - B_N$ should be uniformly distributed $[5.2, 6.2]$ during a recession. This means that the distribution of $B_W - B_N$ should increase significantly to be consistent with our findings.

In (4), $B_W - B_N$ is multiplied by the probability of winning p. Since p is quite small for third-party and independent candidates, $B_W - B_N$ must increase considerably during a recession before more third-party and independent candidates decide to run. This implies that the fundamental puzzle still remains to be solved: how can we account for the increase in the entry of third-party candidates during a recession when they have so little chance of winning?

PROSPECT THEORY

To address this puzzle, we employ prospect theory from behavioral economics (KAHNEMAN and TVERSKY 1979; TVERSKY and KAHNEMAN 1992). Prospect theory differs from the standard rational choice model in the understanding of how people view a probability (known as the decision weight function) and how people evaluate a risk (known as the value function). The decision weight function rests on the idea that individuals have a subjective attitude about probabilities. If p is the objective probability, people use $f(p)$ instead of p to make a choice. A number of experimental studies have shown that people tend to place too much weight on low probabilities (that is, $f(p) > p$), but tend to place too little weight on high probabilities (that is, $f(p) < p$). The value function suggests that people's attitude to risk depends on expected gains or losses. In other words, they tend to be risk-averse for gains and risk-loving for losses. In this study we focus on the role of the decision weight function to explain the entry decision of third-party and independent candidates.

Using the decision weight function, we rewrite (4) as

$$f(p)B_W + f(1-p)B_N - C + D \geq B_N.$$

Numerous studies have sought to identify the exact functional form of the decision weight function (see, for example, GONZALEZ and WU 1999). Most recently, BRUHIN, FEHR-DUDA, and EPPER (2010) designed a series of careful experiments in an effort to find the functional form. Their experiments suggest that people tend to increase the weight on an objective probability of 5% to about 20%, and decrease the weight of an objective probability of 95% to about 80%.[12]

Since the above equation includes B_W and B_N separately, we simply consider that $B_W = 2$ and B_N is uniformly distributed on the range of one.[13] According to the previous numerical example, if potential third-party and independent candidates weight their probability of winning as $f(0.05) = 0.20$ and weight their probability of losing as $f(0.95) = 0.80$, the expected number of third-party and independent candidates increases from zero to one when B_N is uniformly distributed [0.48, 0.58] during a recession, that is, $B_W - B_N$ is uniformly distributed [1.42, 1.52]. This means that if potential candidates place too much weight on their probability of winning, $B_W - B_N$ does not necessarily increase dramatically during a recession. This possibility is consistent with past studies (KAZEE 1980; MAISEL 1982) that suggest that weak candidates running for hopeless congressional races tend to overestimate the probability of winning.[14]

We do not consider the value function here because BRUHIN, FEHR-DUDA, and EPPER (2010) showed that the majority of people are almost risk-neutral regardless of gain or loss. However, according to the gain-loss asymmetry of the value function, potential candidates may tend to be risk-loving in a recession because people are more likely to incur economic losses as the economy slows down. If candidates become risk-

12. More specifically, BRUHIN, FEHR-DUDA, and EPPER (2010) used the following common formula to describe the decision weight function:

$$f(p) = \frac{\delta p^\gamma}{\delta p^\gamma + (1-p)^\gamma}$$

Based on their careful experiments, they estimated that the majority of people have $\delta = 1.063$ and $\gamma = 0.451$ for gains ($f(0.05) = 0.22$, $f(0.95) = 0.80$), and $\delta = 0.878$ and $\gamma = 0.444$ for losses ($f(0.05) = 0.19$, $f(0.95) = 0.76$). Thus, we do not have to consider the role of the value function here.

13. The results do not change so much even if B_W also becomes a random variable.

14. Voters also tend to overestimate the level of election competitiveness (BOWLER and DONOVAN 2011; MCDONALD and TOLBERT 2012).

loving in recessions, the new distribution of $B_W - B_N$ can become lower than [1.42, 1.52]. Moreover, if people tend to have loss aversion, in order to avoid incurring loss, candidates may prefer to run during a recession.

In short, economic downturns could encourage third-party candidates to run for state legislative elections. This is because their reservation wage decreases, they have a larger incentive to change a policy during a recession, and they overestimate their probability of winning.

Conclusion

This study develops a new explanation for "the paradox of not running," that is, why third-party and independent candidates run for public offices in the U.S. even though their probability of winning is trivial. We show that they are more likely to run when the state's economy shrinks because a recession makes holding a political office more attractive relative to staying in the private sector. Using state unemployment as a measure of the business cycle, we found that the number of third-party and independent candidates increases by 1.6 in state house elections and 0.6 in state senate elections as the state's unemployment rate increases by 1%. Our analysis also reveals that the state unemployment rate has no influence on the number of third-party and independent candidates that enter gubernatorial elections. We concluded that our findings are explained by the change in the benefit of holding a political office, rather than by the cost of running, private consumption, or the probability of winning. However, that is not to say that the other elements in the decision calculus are unimportant. They must explain the likelihood of candidate entries, but they are not likely to account for the mechanism underlying the relationship between the business cycle and the number of third-party and independent candidates.

Our argument can be extended to the number of major-party candidate entries in state- and federal-level elections. More specifically, the entry decision of weak major-party candidates (BANKS and KIEWIET 1989; CANON 1993) may be sensitive to the economic circumstances. BANKS and KIEWIET (1989) argue that weak challengers in congressional elections run against an incumbent because this allows them to avoid contesting against a strong candidate from the same party in the primary election and ultimately maximize their probability of winning. This may be more likely to occur if the relative attractiveness of political jobs increases. Future research can test this possibility by using the data of primary and general elections for congressional seats.

Future research should also examine empirically how third-party and independent candidates evaluate their probability of winning. By extending prospect theory, we assume that they are likely to overestimate their probability of winning, yet this should be verified by an experimental or other rigorous approach.

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